



# FLIGHT

The  
AIRCRAFT  
ENGINEER  
&  
AIRSHIPS



First Aero Weekly in the World

Founder and Editor : STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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## Flight

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## CONTENTS

	PAGE
Editorial Comment	
The Other Side	761
The Fairey-Reed Airscrews	762
The Great Adventure	762
Two "Gloster" Machines	763
Royal Aero Club Official Notices	767
Light 'Plane Clubs	767
Two-Seater Competition...	767
London-Cape Town	768
Royal Air Force	773
R.A.F. Intelligence	773
Correspondence	773
Imports and Exports	774

## EDITORIAL COMMENT.



### The Other Side

IN our Editorial Comment last week, under the heading, "Is it Cricket?" reference was made to the purchase of a certain number of American aero engines to be fitted into a new type of British aeroplane, and the Air Ministry was criticised for waiving, in this connection, certain rules in force relating to type tests of British aero engines. It has always been, and always will be, the policy of FLIGHT to be scrupulously fair to everyone, and as it now appears that the statement made, upon the information then in our hands, did not represent the essential facts, we willingly present, this week, the further points since placed before us in order that our readers may form an unbiased opinion of the whole subject.

Concerning the statement that the Curtiss D.12 aero engines, the type of engine in question, were to be accepted without having passed the Air Ministry type tests, insisted upon in the case of British aero engines, the facts of the case are as follows :

The machines to be fitted with these engines were ordered urgently for a test squadron, and it would not have been advisable to wait for the passing of the engine test, and as the engines had passed the equivalent test in America, they were ordered, but the Company has undertaken to pass the test as soon as possible and before the machines are delivered to the Service.

Concerning the decision to order a fairly large quantity of D.12 engines, the fact that the Fairey "Fox" is a service type, and that thus it may not be described in detail, renders a discussion of the whole subject extremely difficult, but it may be said that the entire design of the "Fox" was based upon the use of the D.12 engine. It was decided, after the most careful consideration, that it would not be possible to test out the aircraft thoroughly by ordering a small number, and that only by equipping a squadron with the type would it be possible to discover definitely whether or not the machine and engine fulfilled certain requirements. Any further engines of

## DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list :—

1925	
Nov. 26	Mr. A. H. R. Fedden, F.R.Ae.S. "Installation Problems in Air-Cooled Engines," before R.Ae.S.
Nov. 28	Inst.Ae.E. visit to Shipping, Engineering and Machinery Exhibition, Olympia.
Dec. 3	Prof. B. Melville Jones, A.F.C., A.F.R.Ae.S. "The Control of Stalled Aeroplanes," before R.Ae.S.
Dec. 15	M. E. Dewoitine. "The Advantages of Metal Construction," before Inst.Ae.E.
Dec. 16	Air Vice-Marshal Sir W. Sefton Brancker. "Air Communications in the Middle East," before Royal United Service Institution.
Dec. 17	Mr. A. J. Cobham. "Long-Distance Aeroplane Flights," before R.Ae.S.
1926	
Jan. 12	Mr. C. Howarth. "Some Aspects of Full-Scale Experiments," before Inst.Ae.E.
Jan. 26	Lieut. Olechnovitch. "The Care and Maintenance of Tools as an Important Factor in Workshop Routine," before Inst.Ae.E.

the type are to be built in this country, when they will, of course, be entirely British except for the original design. It is considered that the Air Ministry must have the most suitable for their purpose, the only qualifying clause being the question of assuring British quantity production in case of war.

### The Fairey-Reed Airscrews

In connection with our comment in last week's issue, on the subject of the Schneider Cup Race, an apology is due for certain statements made, which were based upon information which we now understand did not represent the facts. Thus with reference to the statement that the propellers vibrated, this, we learn, was not the case since if a propeller of this type flutters or vibrates it emits a distinctive sound which is unmistakable and can be heard over long distances, and this sound was not present in the Schneider Cup racers.

There was no case of complaint, we are informed, before the Schneider Cup race, of the propellers giving any trouble of any kind. Concerning the statement that "the propellers did not always fit the bosses as well as they might have done," the position appears to be that when the Fairey Aviation Company received the order for the propellers, they were given a racing boss on which to fit them. The propellers were built, and fitted and balanced on this boss.

At Baltimore, however, some trouble appears to have been experienced, but, under these circumstances, it would seem that this can scarcely have been the fault of the makers of the propellers, who had built them to fit the special boss supplied for the purpose.

With regard to the statement that the propellers were not suitable to the machines we find, on further investigation, that no complaints were made with regard to the suitability of these propellers after air trials, and the makers were not called upon to make any alterations to them. Furthermore, spare propellers for the racers to the same designs were ordered as a result of the air trials.



### Bossoutrot Beats Seven Records

PILOTING a four-engined Farman "Goliath" biplane, fitted with Farman engines of 500 h.p. each, and Lamblin radiators, the French airman Lucien Bossoutrot established seven world's records at Le Bourget on November 12. These records are as follows:—Duration, 2 hrs. 13 mins 49.6 secs., with 1,000 kgs.; 1 hr. 47 mins. 10.5 secs. with 2,000, 3,000, and 4,000 kgs.; altitude, 4,475 m. with 2,000 kgs.; 1,942 m., with 3,000 kgs.; 1,363 m. with 4,000 kgs.

### Schneider Cup Team Home Again

ON November 16 the British team which went to America to try and win back the Schneider Cup returned home in the *Minnewaska*, which arrived at the King George Dock early in the morning. The party included Capt. C. B. Wilson (in charge), Capt. Biard and Capt. Broad (pilots) Mr. Folland and Mr. Mitchell (designers), Mr. Jackson, and the mechanics. Other members of the original party had returned by earlier boats. They received a hearty welcome back from friends and many others connected with aviation.

### Croydon's Neon Ground Lights

DURING the last few days Capt. C. H. Biddlecombe, who is in charge of the Air Ministry experiments in night flying, has carried out a number of important tests in connection with the Neon ground lights that have been installed at Croydon aerodrome. By means of a captive balloon, he has made a series of observations under various conditions. We believe the results of these tests are very promising.

### The Great Adventure

Monday of this week, November 16, saw the start of a flight which may have a most important bearing on the future of civil aviation. If Mr. Alan J. Cobham and his two companions Mr. Elliott and Mr. Emmott, succeed in reaching Cape Town on their De Havilland 50, fitted with an Armstrong-Siddeley "Jaguar" engine, they will have proved the quality of British aircraft and aero engines, and will, furthermore, provide very valuable data for use later, if and when it is decided to extend the present air services. The route is naturally a most difficult one as was discovered by Sir Pierre van Ryneveld and his companions who flew, in 1920, from Brooklands to Bulawayo, although a change of machines became necessary owing to a mishap at Wadi Halfa. Aerodromes, or rather fields suitable even for emergency landing grounds, are few and far between, to which must be added the difficulty presented by the rarefied condition of the air in the tropical regions, which will have the effect of reducing the lift and engine power, and consequently cause take-offs to be equivalent to a start at several thousand feet altitude under more temperate climates.

The substitution of the Armstrong-Siddeley "Jaguar," for the Siddeley "Puma," with which the D.H. 50 has hitherto been fitted, should be a great asset in this respect, as the power increase will enable the machine to get away under conditions where the old and trusty "Puma" with its lower power would have been inadequate.

The effort is in every sense an all-British one, and it is gratifying to find that so many firms and individuals have co-operated in getting together the funds and equipment necessary for such an expedition. Our thoughts and all good wishes will follow the three gallant aviators on their venturesome journey and it is to be hoped that the flight will be a success. At the same time, sight should not be lost of the fact that the flight is intended primarily as a survey of a most difficult route, and that no attempt will be made at establishing records or at forcing the pace.

### Broadcasting from the Air

THE Imperial Airways Vickers "Vanguard" air liner played the part of an aerial broadcasting studio on the night of November 13. Piloted by Capt. Hinchliffe and with a concert party on board—including Morris Harvey and the Savoy Orpheans—the machine ascended from Croydon aerodrome, aided by flood lights, and cruised about in the dark overhead while the artists within its large cabin provided a musical programme. This was broadcast by means of a microphone (located in the cabin) and wireless transmitter, picked up by a land receiving station and relayed by the B.B.C. stations. We did not hear this transmission ourselves, but understand that reception was, on the whole, not too bad, in spite of the Rolls-Royce obbligate.

### "Some Problems in Aeroplane Structural Design."

A PAPER under above title was read before the Royal Aeronautical Society on November 12 by H. W. Howard, B.A., B.Sc., A.F.R.Ae.S. The paper was a very long one, and of such a highly technical nature that it cannot usefully be summarised. We must therefore advise those of our readers who desire to read the paper to obtain a copy of the Society's journal in which the paper and the ensuing discussion will be published in full.

### Air Ministry Acquires Castle Bromwich Aerodrome

BUILDINGS and 179 acres of land at Castle Bromwich, Birmingham, have been acquired from the Teme and Rea Drainage Board for £60,000 by the Air Ministry. The ground is to be used once again by the Government as an aerodrome.

## TWO "GLOSTER" MACHINES

The "Grouse II" and the "Grebe II"

(Concluded from p. 746)

LAST week we illustrated the Gloucestershire Aircraft Company's two-seater training machine, type "Grouse II," and described the aerodynamic design of the machine, as well as that of its "big brother" the "Grebe II." It was pointed out that generally speaking the two machines are very

### Constructional Features

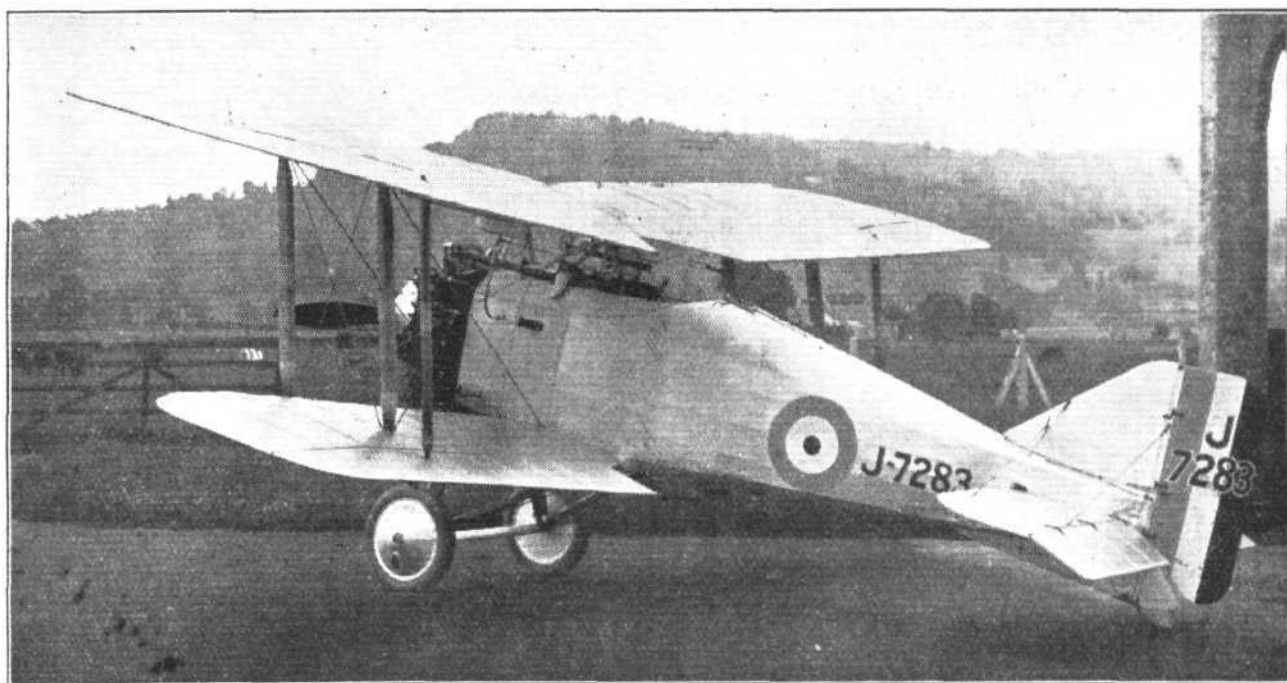
In many respects the construction of the "Gloster" machines is similar to that of the British Nieuport "Night-hawk," which was designed by Mr. H. P. Folland, while he was with that firm. When we point out that Mr. Preston,



THE GLOSTER "GREBE II" : Three-quarter front view.

similar, and that the detail description, except where otherwise stated, could be taken to apply to both types. In the present issue of *FLIGHT* we publish photographs and general arrangement drawings of the "Grebe II," and a number of

Mr. Folland's chief assistant, accompanied Mr. Folland when he transferred to the Gloucestershire Aircraft Company, the reason for the "family likeness" will readily be appreciated. Perhaps the part which has been least altered



THE GLOSTER "GREBE II" : Three-quarter rear view.

sketches showing constructional details. The following article deals with the constructional features of both machines, and concludes with a brief summary of the main characteristics, performance figures, etc., of the "Grouse II" and "Grebe II."

as regards constructional details is the fuselage, which, except for minor changes, is still almost identical with that of the earlier machine. This is in no way intended as a criticism, but on the contrary appears to provide proof that the constructional features have successfully withstood the test of time.



Briefly, the fuselage of the two Gloster machines under review comprises ash longerons, spliced in the neighbourhood of the cockpit, and swelling, as regards the lower longerons, to a considerable depth in the region where are attached the lower wing spars and the undercarriage struts. The fuselage struts are tapered towards their ends, and fit over the bolt heads of the fuselage fittings. The latter are of very simple form, and consist generally speaking of flat plates in the line of pull, very little bending being employed. The fuselage bracing is in the form of round tie-rods, threaded at the ends to fit the fork ends securing them to the steel clip fittings. Over the main fuselage structure light formers and stringers provide a good streamline form above and below. The fuselage covering is fabric.

In front the fuselage terminates in an engine plate constructed of multi-ply wood, which is attached to the four longerons by very simple sheet-steel fittings, and to which is bolted the special "saucepan" engine bearer of the Armstrong-Siddeley engine. At the stern the fuselage is of somewhat unusual design in that the stern post is not permanently built into the fuselage structure, but is an integral part of the structure of the top and bottom fins, and is secured to the longerons by special fittings, as shown in one of the sketches published this week. The fins, rudder and elevator are of normal wood construction, but the

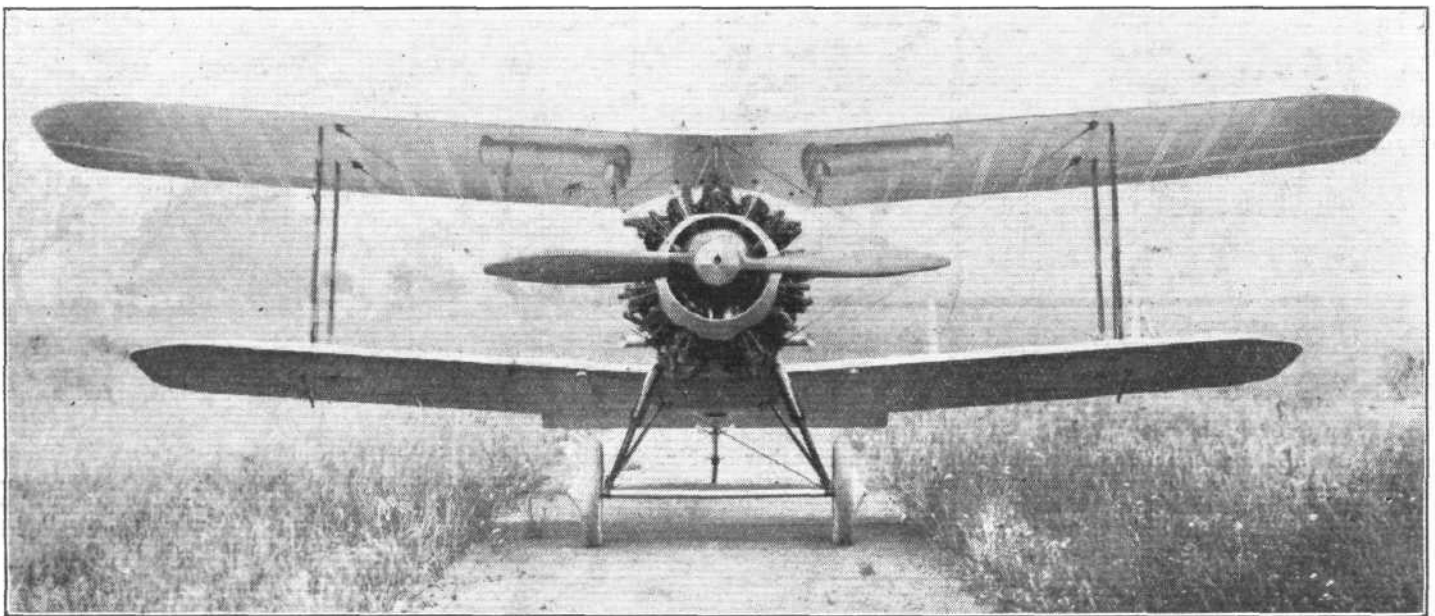
in the way as regards the machine controls. The usual interrupter gear is, of course, fitted so as to enable the guns to be fired "through" the propeller.

#### Petrol System

The petrol system of the "Gloster" machines is of the direct gravity feed type, the two petrol tanks being situated in the top plane, and pipes leading from them down to a T-collector with non-return valves (shown by a sketch last week), which enables the pilot to take the fuel from either tank, or from both simultaneously if required. The two petrol cocks are provided with extension handles, which can be reached from the cockpit, so that if the pilot believes himself to be in danger of crashing he can shut off the petrol. The absence of petrol pumps and the provision of two separate petrol tanks should result in great reliability as regards the petrol system, and in the case of the "Grebe," which is a military machine, a bullet hole in one tank would not put the machine out of action, as the pilot would merely switch on the other tank.

#### THE WINGS

It has already been stated that both in span, chord and section the top and bottom planes of the Gloster machines are unequal. The bottom wing section is a "thin" high-speed one, while the top plane section is a deep high-lift



THE GLOSTER "GREBE II," ARMSTRONG-SIDDELEY "JAGUAR" ENGINE: Front view.

elevator attachment is somewhat unusual in that the elevator spars are not secured direct to the longerons, but to a cross-tube suspended on the diagonal bracing wires. This feature is shown in the same sketch. The trimming gear for the tail plane is in the form of a worm, and is operated by a lever from the pilot's cockpit.

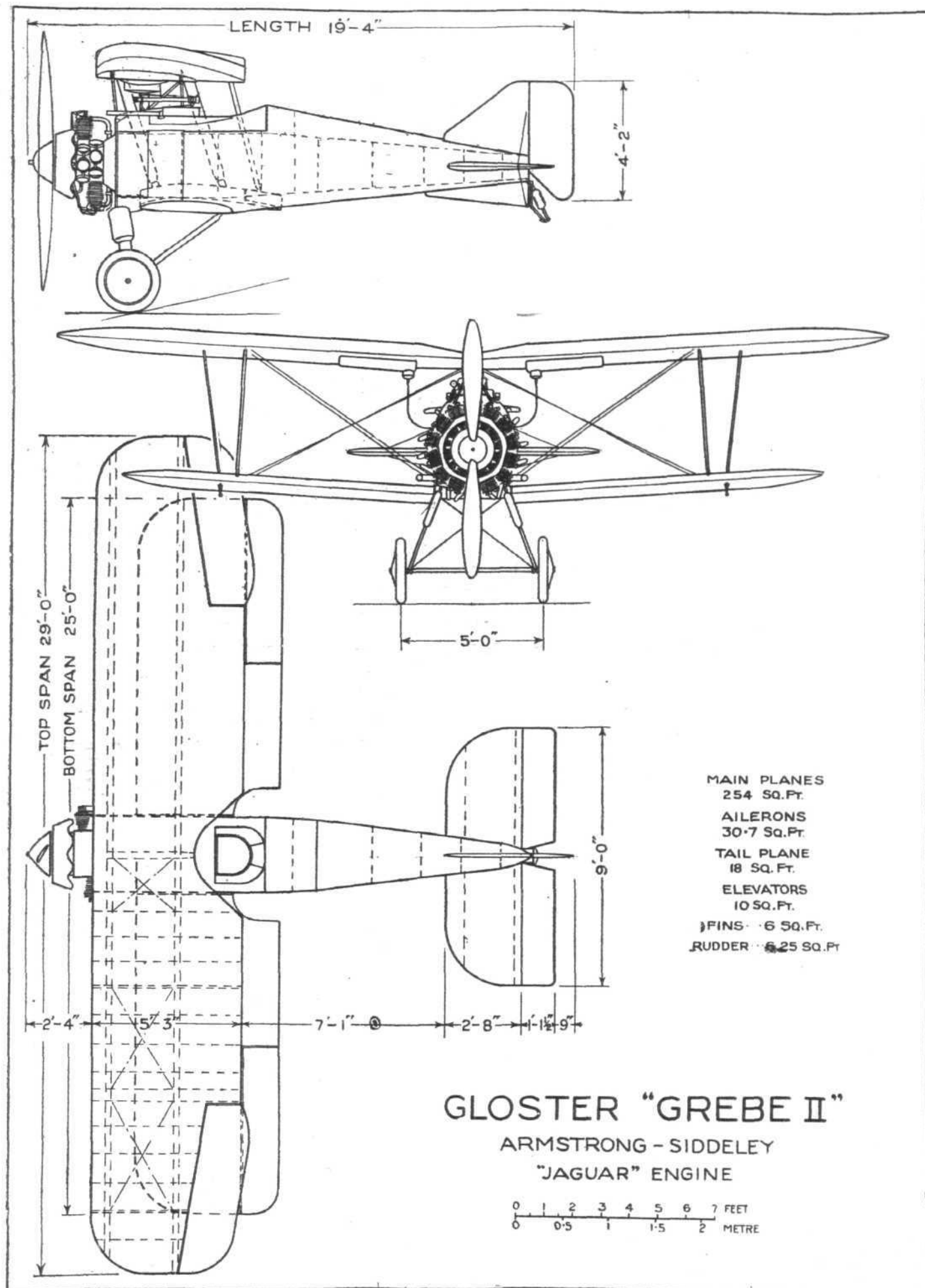
The undercarriage is of normal vee type, but the shock-absorbing medium is formed by rubber blocks working in compression, and the bounce is checked by an oil damper gear or dashpot. The tail skid, which moves with the rudder so as to give good steering on the ground, is similarly sprung. It formed the subject of one of the sketches published last week.

#### Cockpits

In the case of the cockpits a distinction must, of course, be made between the "Grouse" and the "Grebe," the former being a two-seater school machine and the latter a single-seater fighter. In the "Grouse" the two cockpits are placed one just aft of the wings and the other partly under the top plane, which is cut away to facilitate access. Dual controls of normal stick type are provided, and the machine can be piloted from either seat. In the "Grebe" there is but a single cockpit, but this is of very ample proportion, and is not in the least cramped. The two machine guns which form the normal equipment of this type are housed inside the fuselage fairings, so that the pilot can change his ammunition drums and generally attend to his guns without having to put his hands over the side, where, at the high speeds, and great altitudes attained, they would quickly become numbed with cold. The guns, it may be added, are very conveniently situated, and yet are not in the least

section. The construction is normal, except that the wing spars, which are of I-section, are built up of several laminations. The reason for this is probably that the waste is considerable when spindling I-section spars out of solid spruce. The ribs are normal N-girders of spruce, and the drag bracing is in the form of round section tie rods. Where the tanks, are housed in the top plane, the bracing is transferred from the centre lines of the spars to the top, so as to clear the top of the tanks. The ailerons, which are operated by tierods and T-cranks inside the bottom wing, are not hinged directly to the rear spars, but to false spars forming an angle with the main spars. In the latest machines, they project beyond the trailing edge of the main wing. Only the bottom ailerons are operated direct from the cockpit, the movement being transmitted to the top ailerons by a single strut on each side, the attachment for which, as well as the T-crank, is shown in sketches published this week.

The top plane of the Gloster machines does not incorporate the usual centre-section, but the two halves are attached to a steel tube *cabane* rising from the top longerons of the fuselage. The attachment is a very simple one and consists of two bolts, one for each spar. The details, as well as those of the spar root fittings, were shown by some of our sketches published last week. The lower spars are secured to short spar roots bolted underneath the bottom longerons of the fuselage, and in the case of the spar coinciding with the chassis strut attachment short tubes running diagonally to the lower longerons brace the spar roots against the oblique loads imposed by the chassis strut. Details of the arrangement were also given last week. The wing fittings are of simple straightforward type, and the work of dismantling



THE GLOSTER "GREBE II": General arrangement drawings, to scale.

and re-erecting the wings of the Gloster machines takes but a very short time. The wing bracing is by swaged wires of usual type, and the arrangement of the bracing follows orthodox single-bay biplane practice.

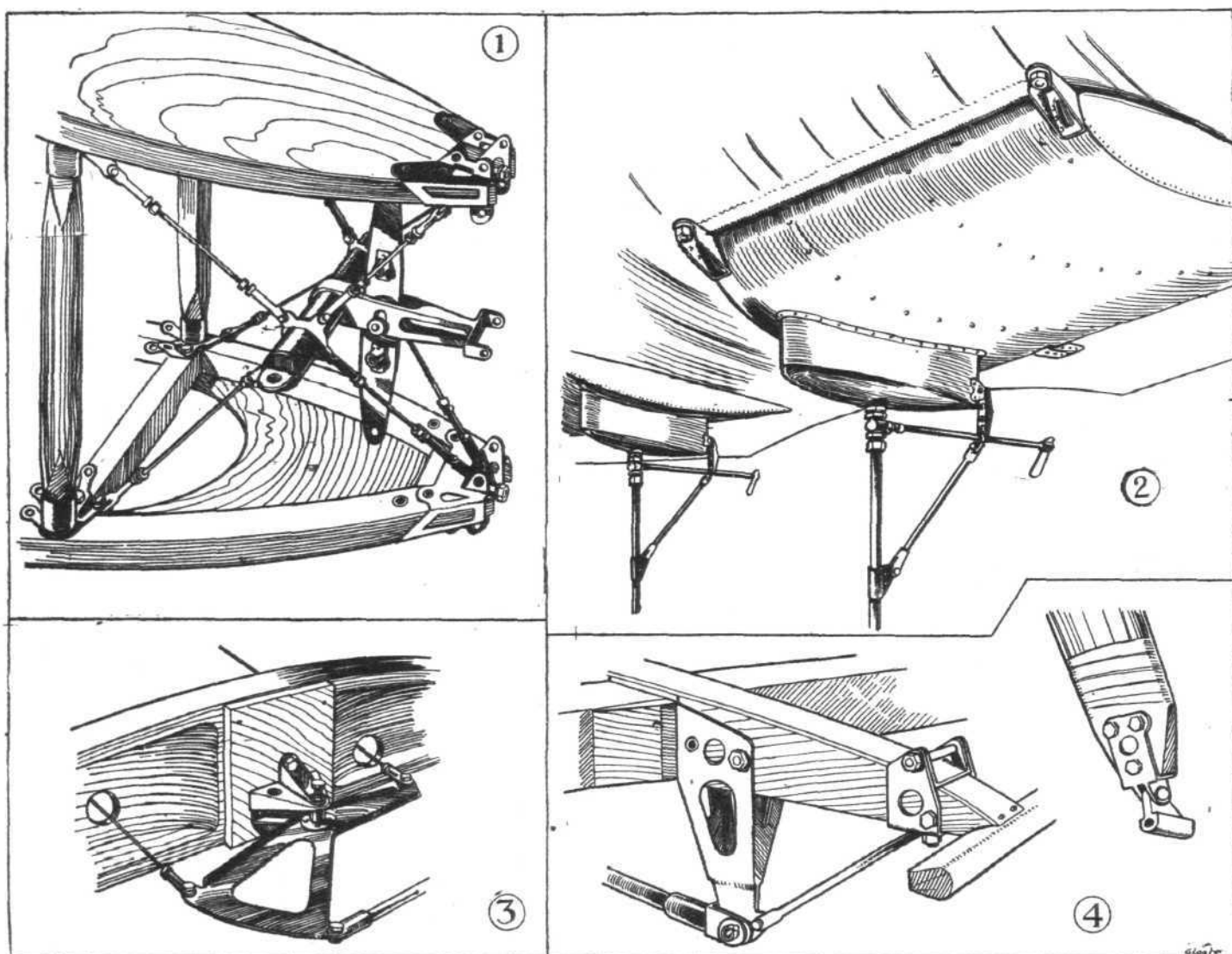
In conclusion, it may be stated that the workmanship of the "Gloster" machines is of a very high order, the firm being fortunate in having had long experience of accurate woodwork before turning its attention to aircraft construction, which experience is now made the fullest use of in the wood members of all Gloster aircraft.

Before giving performance figures of the two Gloster machines, we would again point out that although the "Grouse II" and "Grebe II" can be supplied separately, the combination of the two types for school work and actual service purposes is a very economical one, owing to the fact

The load factors of the "Grouse II" are as follows: Front wing truss, 7; rear wing truss, 5; working to a stress of 5,000 lbs./sq. in. for spruce members. The fuselage factors are 5 on front and rear portions for landing loads, and the load factor of the undercarriage is  $4\frac{1}{2}$ . The weight of the machine fully loaded (with a weight of 360 lbs. for pilot and passenger) is 2,120 lb., giving a wing loading of  $\frac{2,120}{208} =$

10.2 lb./sq. ft., and the power loading is  $\frac{2,120}{180} = 11.8$

lb./h.p. With this loading, the performances of the Gloster "Grouse II" is: Maximum speed, 118 m.p.h.; landing speed, 52 m.p.h.; climb to 10,000 ft. in 17 minutes; ceiling, 18,000 ft.; duration,  $3\frac{1}{4}$  hours at 10,000 ft.



**SOME "GLOSTER" CONSTRUCTIONAL DETAILS:** 1 shows the tail-plane support and elevator crank as well as fittings for the stern-post, etc., of the "Grebe." In 2 are seen the gravity petrol tanks, mounted in the top plane, the petrol cocks being within reach of the pilot from his cockpit. The fuel flows to a distributor (shown last week) which enables fuel to be taken from either or both tanks. The ailerons of the Gloster "Grebe" and "Grouse" are operated, as regards the lower flaps, by a crank of the form shown in 3, which is mounted on a specially strengthened rib, and from which tie rods run to the controls, while a steel tube runs to the aileron crank, as shown in 4. The movement is transmitted to the top ailerons by struts, the attachment for which is shown inset in 4.

that most of the fittings and many of the engine parts are identical in the two types, so that the number of spares which it is necessary to stock is reduced to a minimum.

### Characteristics of the "Grouse II"

The main dimensions, areas, &c., of the "Grouse II" were shown on the general arrangement drawings published last week, and it is, therefore, unnecessary to repeat them here. The engine fitted as standard is the Armstrong-Siddeley "Lynx" of 180 h.p. at 1,620 r.p.m. The petrol tanks have a capacity of 20 gallons each, while the oil tank, situated in top fairing of fuselage near the engine, has a capacity of  $3\frac{1}{2}$  gallons. With the amount of fuel stated the duration is  $3\frac{1}{4}$  hours at 10,000 ft.

### Characteristics of the Gloster "Grebe II"

The Gloster "Grebe II" is a fast single-seater fighter designed for work at fairly great altitudes, having a high performance and being extremely sensitive to control, yet having a considerable degree of stability so that it can be flown "hands off." The engine is an Armstrong-Siddeley "Jaguar," rated at 385 h.p., but developing a normal power of 396 b.h.p. at 1,700 r.p.m., which is the normal speed of the engine, and a maximum of 421 b.h.p. at the maximum speed of 1,870 r.p.m. The capacity of the two petrol tanks, mounted in the top plane, is 26 gallons each, or a total of 52 gallons. The oil tank capacity is  $5\frac{1}{2}$  gallons, and the duration with this quantity of fuel is  $2\frac{1}{4}$  hours at 15,000 ft.



The total loaded weight of the "Grouse II" is 2,614 lb., made up as follows: Engine, 820 lb.; propeller, 50 lb.; oil, 55 lb.; petrol, 390 lb.; piping, 25 lb.; total for power unit, 1,340 lb. The structure item weights are: Wings, 350 lb.; fuselage, 139 lb.; gun mounts, 10 lb.; fins, 7 lb.; tail trimming gear, 10 lb.; tail and elevators, 28 lb.; tail skid, 9 lb.; rudder, 4 lb.; controls, 26 lb.; cockpit, 16 lb.; fairing, 69 lb.; main petrol tanks, 68 lb.; undercarriage, 103 lb.; oil tank, 11 lb.; total structure weight, 850 lb. The military load is 424 lb., composed as follows: Pilot, 180 lb.; electrical equipment, 30 lb.; oxygen, 21 lb.; instruments, 23 lb.; guns, ammunition, sights and C.C. gear, 170 lb. total, 424 lb.; total loaded weight, 2,614 lb.; wing loading

$\frac{2,614}{254} = 10.3$  lb./sq. ft.; power loading  $\frac{2,614}{400} = 6.54$  lb./h.p.

The performance figures of the Gloster "Grebe II" are as follows: Maximum speed, 152 m.p.h.; landing speed, 53 m.p.h.; speed at 10,000 ft., 146 m.p.h.; climb to 20,000 ft. in 24 minutes; absolute ceiling, 23,000 ft.; duration at 15,000 ft., 2½ hours. The petrol consumption is 27.5 gallons per hour and the oil consumption 1.2 gallons per hour at full throttle. The load factors are the same as those quoted for the "Grouse II." In addition to the two Vickers machine guns and 1,200 rounds of ammunition, the machine has provision for carrying four 20-lb. bombs.

## The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

### MONTHLY HOUSE DINNERS

It has been decided to hold Monthly House Dinners at the Royal Aero Club at which subjects of interest may be debated upon.

The first dinner will be held here on Thursday, November 26, 1925, at 7.30 p.m., and Mr. C. R. Fairey will open a debate on "American Aviation."

The Duke of Sutherland, the chairman of the club, will preside. Morning dress. Dinner, 5s.

Members wishing to attend are requested to notify the secretary as soon as possible.

Offices: THE ROYAL AERO CLUB,

3, CLIFFORD STREET, LONDON, W. 1.

H. E. PERRIN, Secretary

## LIGHT 'PLANE CLUB DOINGS

### London Aeroplane Club

DURING the past week fog and rain prevented any flying on four days. Flying on the three days was also somewhat limited. The total flying time for the week was 13 hours 50 minutes.

The following Members were given flying instruction:—J. S. M. Michie, Sir John Rhodes, O. J. Tapper, N. J. Hulbert, Miss Fell, N. Jones, A. Kennedy, Miss O'Brien, Commandant, Allen, Miss Tagart, A. R. Ogston, W. Hay, C. H. Craig, K. V. Wright, J. Barros, E. K. Bligh, D. Kittell, A. Lees.

G. H. Craig and N. J. Hulbert made solo flights and will shortly do the qualifying tests for their Certificates.

W. Roche Kelly and Squad-Leader M. E. A. Wright, both holders of Certificates, made solo flights.

F. G. M. Sparks, the senior pilot instructor, is away on his week's holiday, W. J. Witcombe, the other pilot instructor, having returned to duty.

The "Reid" machine for testing flying aptitude presented to the Club by Sir Charles Wakefield, Bart., has now been erected in the Club Shed, and on Saturday afternoon, Flight-Lieut. G. H. Reid, the inventor, gave an informal lecture to the members present and tested them individually on the machine.

On Sunday afternoon, in spite of the fog which prevented any flying, a large number of members arrived at the aerodrome and the "Reid" machine was in great demand, all the members present going through the test. The charts clearly demonstrated the progress made by the various members in their flying instruction. It is proposed to test all flying members at regular intervals on the "Reid" machine, and for the present these tests will be done during the week-ends.

### The Lancashire Aero Club

ON November 12 Mr. Cantrill and Mr. Scholes were both at the aerodrome, A. Goodyear and G. Hardy having instruction

during the afternoon on L.R. On Friday, 13th, Mr. Cantrill tested L.R. and L.V., and then took G. Hardy and A. Goodyear for dual. Mr. Scholes was busy all the afternoon giving S. Crabtree dual on L.V.

Saturday, 14th, in spite of bad weather (fog) was a busy day. There were five solo flights by pupils, two of which were first solos. Mr. Cantrill tested L.R., after which A. Goodyear had 40 minutes' dual. At the conclusion of this dual Mr. Cantrill got out of the machine and Mr. Goodyear made his first solo, a nice flight of 10 minutes, ended by a perfect landing. Mr. Scholes tested L.V. and gave D. F. Dyson 40 minutes' dual, followed by H. Stern 40 minutes' dual. H. Macnair 15 minutes' dual. Mr. Cantrill on L.R. gave T. English 20 minutes' dual, P. Mickelson 30 minutes' dual, J. Wilkinson 30 minutes' dual. After this T. Wilkinson went up alone for 10 minutes on his first solo. He landed correctly after an excellent trip. Both Mr. J. Wilkinson and Mr. A. Goodyear, who made their first solos, were entirely trained by the club.

Other solo flights were made by A. Goodfellow 20 minutes, M. Lacayo 25 minutes, J. Leeming 15 minutes.

Sunday, 15th, Mr. Cantrill tested L.V. and gave the following pupils dual. A. Wilkinson 20 minutes, B. Hope 20 minutes, A. Goodyear 20 minutes, R. Williams 15 minutes, B. Hope (again) 15 minutes, C. Tummers 15 minutes. Mr. Scholes tested L.R. and gave instruction to S. Crabtree 30 minutes, D. Macnair 30 minutes, E. Moss 20 minutes, F. Davison 15 minutes, H. Stern 30 minutes, G. Chadwick 20 minutes. The following made solo flights: A. Wilkinson 20 minutes, M. Lacayo 20 minutes, J. Leeming 15 minutes.

Interest at the moment is centred on Mr. Stern and Mr. Crabtree, both are doing landings and are expected to go solo any time; they are racing neck-and-neck, and the betting is even. Next week-end should settle which of them is first to fly alone.

## TWO-SEATER LIGHT AEROPLANE COMPETITION, 1926.

WITH reference to the Two-Seater Light Aeroplane Competition, 1926, for which the proprietors of the *Daily Mail* have offered prizes amounting to £5,000, the Royal Aero Club in consultation with the Air Ministry and the Society of British Aircraft Constructors have issued the following decisions as a result of various enquiries from intending competitors:—

**Fuel.**—The ingredients of the fuels must be commercially obtainable in bulk.

The fuel used by all engines in the competition shall be substantially the same as that used in the respective type tests for certificates of airworthiness, and shall be within 5 per cent. of the specific gravity of such fuel.

The unit of fuel is a unit of weight.

**Cockpit Width.**—A cockpit width of not less than 24 in. to be measured at the seat level must be provided for both pilot and passenger.

In the case of a side by side machine the cockpit width must not be less than 44 in., to be measured at the seat level.

In the case of a machine with staggered seats a width of not less than 24 in. must be provided for both pilot and passenger to be measured at the seat level.

**Certificates of Airworthiness.**—A certificate of airworthiness for the aeroplane must be obtained and produced to the Royal Aero Club one week before the opening date of the competition.

# THE LONDON—CAPE TOWN IMPERIAL AIRWAY SURVEY FLIGHT

On Monday last, November 16, Alan J. Cobham, the British pilot whose name is known all the world over in connection with the numerous and remarkable "air dashes" to various distant countries he has made from time to time, started on his latest—and, as he himself says, the hardest—air exploit. This consists of a "blaze the trail" flight from London to Cape Town and back, a total distance of nearly 20,000 miles.

Officially the flight commenced at Croydon, but actually Cobham took off from Stag Lane aerodrome, Edgware, the home of the de Havilland machine on which he is making the flight. The start from Stag Lane was originally timed for 9.30 a.m., and pilot and part of the crew—the latter comprising Mr. A. B. Elliott, the engineer who has accompanied Cobham on previous occasions—were at their posts at the appointed time. However, it was November—and in England; so, as might be expected, our old enemy, fog, stepped in and ordained otherwise. It was not, in fact, until about 10.30 a.m. that they were able to get away for Croydon.

Meanwhile a large crowd had gathered together at Croydon to give the airmen a hearty send-off. Among the many who waited patiently for their arrival, besides relations and personal friends of the airmen, were several well-known personalities connected with aviation. One of these, of course, was Sir Sefton Brancker, Director of Civil Aviation, who has made several big flights with Cobham. Unfortunately, Sir Sefton had an important engagement, and had to leave before Cobham actually arrived, much to the disappointment of both.

Weather conditions at Croydon were also very bad. In fact, Cobham had to be guided into the aerodrome by means of fog maroons. However, he managed to land safely on the aerodrome, and as the blue-and silver D.H.50 taxied up to the "platform" it was soon surrounded by an enthusiastic crowd of well-wishers. Mrs. Cobham—and, of course, their magnificent Alsatian wolfhound—and his father and mother then proceeded to give their farewells and good wishes. Relatives of the crew—Elliott and Mr. B. W. G. Emmott, the cinematographer who joined the party at Croydon—also joined in, many mascots were presented, and finally there were farewells and handshakes all round.

In the meanwhile the machine and the Siddeley "Jaguar" engine were given a final look-over, tanks were replenished with "B.P." and "Castrol," and certain oddments in the way of luggage put aboard. As regards the latter, it may be of interest to note, included in this was a bag containing a small consignment of souvenir cards of the flight, the carrying of which had received the sanction of the Postmaster-General.

At 11.30 a.m. all was ready, and the machine took the air amid much cheering, and was soon lost to view in the haze which still hung over the aerodrome. After a brief stop at Lympne, Cobham reached Le Bourget at 3 p.m., where, for the present, we will leave him waiting to continue his journey to Lyons, etc.

Having thus seen Cobham and his crew safely on their way, let us now give a few notes on the why and the wherefore of this 8,000-mile flight from London to the Cape.

This expedition attempting a flight from London to Cape Town, has been organised with several objects in view. Primarily, as propaganda for British aviation, a successful flight would have a world-wide effect, and would demonstrate the great possibilities of air transport for rapid long-distance communications. At the same time, by means of the camera and with the assistance of the Press, it will be possible to bring before the public a most interesting account of the expedition, and to show in a striking fashion the great opportunities for development which exist throughout the immense territories through which the flight will pass—the Sudan, Uganda, Kenya, Tanganyika, Rhodesia, and South Africa.

With this object in view, special arrangements have been made with the Gaumont Company, one of whose cinematographers, Mr. Emmott, will travel on board the aeroplane and will make a film of the whole flight for public exhibition.

Imperial Airways, Ltd., who are largely interested in the expedition, have commissioned Mr. Cobham to prepare a detailed survey of the countries through which he will pass, and to prepare a report on the possibilities of air transport developments.

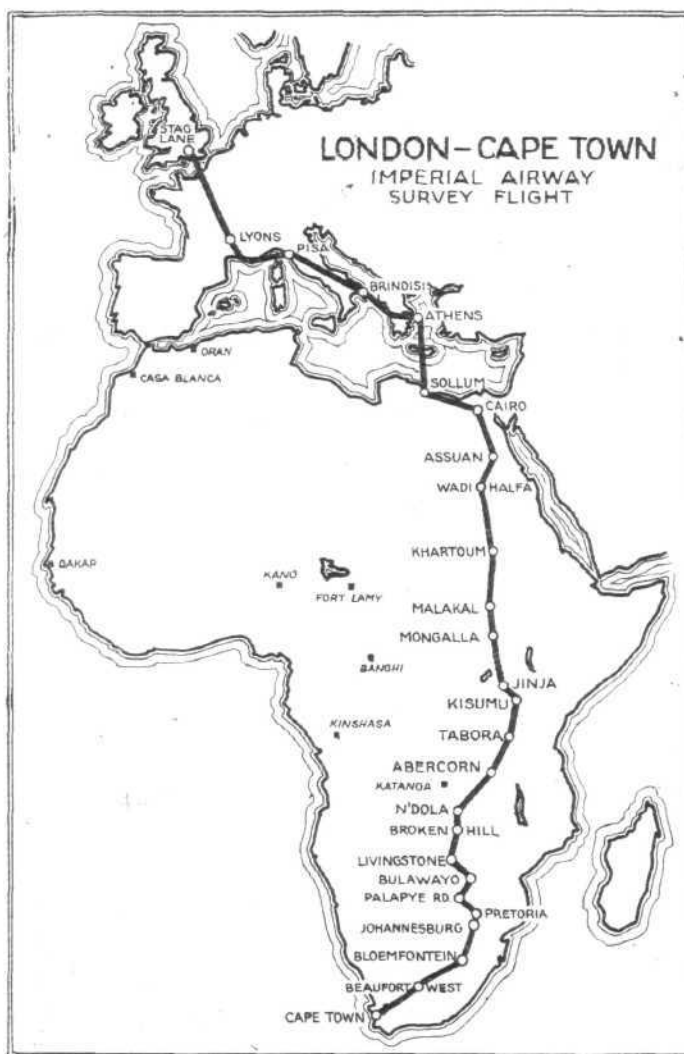
Throughout Africa speedy communications are almost non-existent, and the development of such huge countries is being retarded owing to the absence of adequate transport facilities; the expedition will therefore not only demonstrate the practical possibilities of operating aircraft in the African Continent, but will also investigate openings for local air routes.

The D.H. 50J aeroplane which is being used is the identical one which Mr. Cobham flew when he piloted Sir Sefton Brancker, K.C.B., A.F.C., the Director of Civil Aviation, to Rangoon and back last winter. For the flight now to be attempted this machine has been modified in various details; a 385 h.p. Armstrong-Siddeley "Jaguar" engine has been installed in place of the 240 h.p. Siddeley "Puma" used on the Rangoon flight. The aeroplane will have therefore nearly double the horse-power, although, owing to the efficiency of modern aero engine design, its weight is increased by only a negligible margin. This 14-cylinder air-cooled radial

engine is considered of special suitability for aircraft operating in tropical countries.

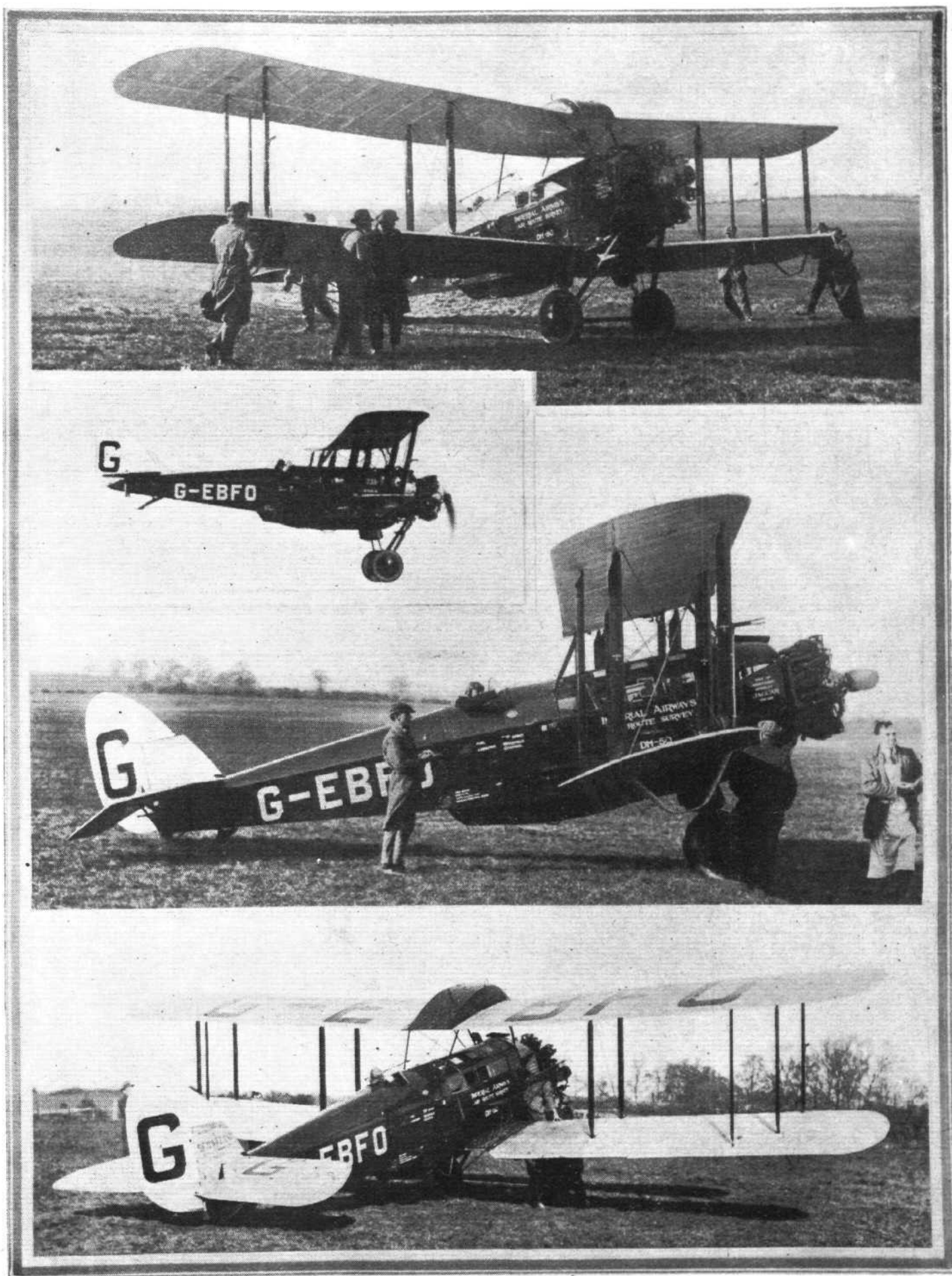
The flight will be a great test of both the de Havilland aeroplane and the Armstrong-Siddeley "Jaguar" engine, for the route through Central Africa, besides passing through the tropics, lies over very high country so that landing grounds are in most cases between 4,000 to 6,000 ft. above sea level. Naturally, in such high altitudes the density of the air decreases, and the higher the landing ground the more difficult it becomes for the aeroplane to "lift" on the thin air when "taking off." The heat of the tropics makes another obstacle with which the machine has to contend, as the relative density of the atmosphere at the landing grounds in Central Africa will be equivalent to an altitude of 10,000 ft. at home.

The fuel for the flight has been supplied by the British Petroleum Co., who have shipped supplies of B.P. spirit to the East African ports from where it has been distributed

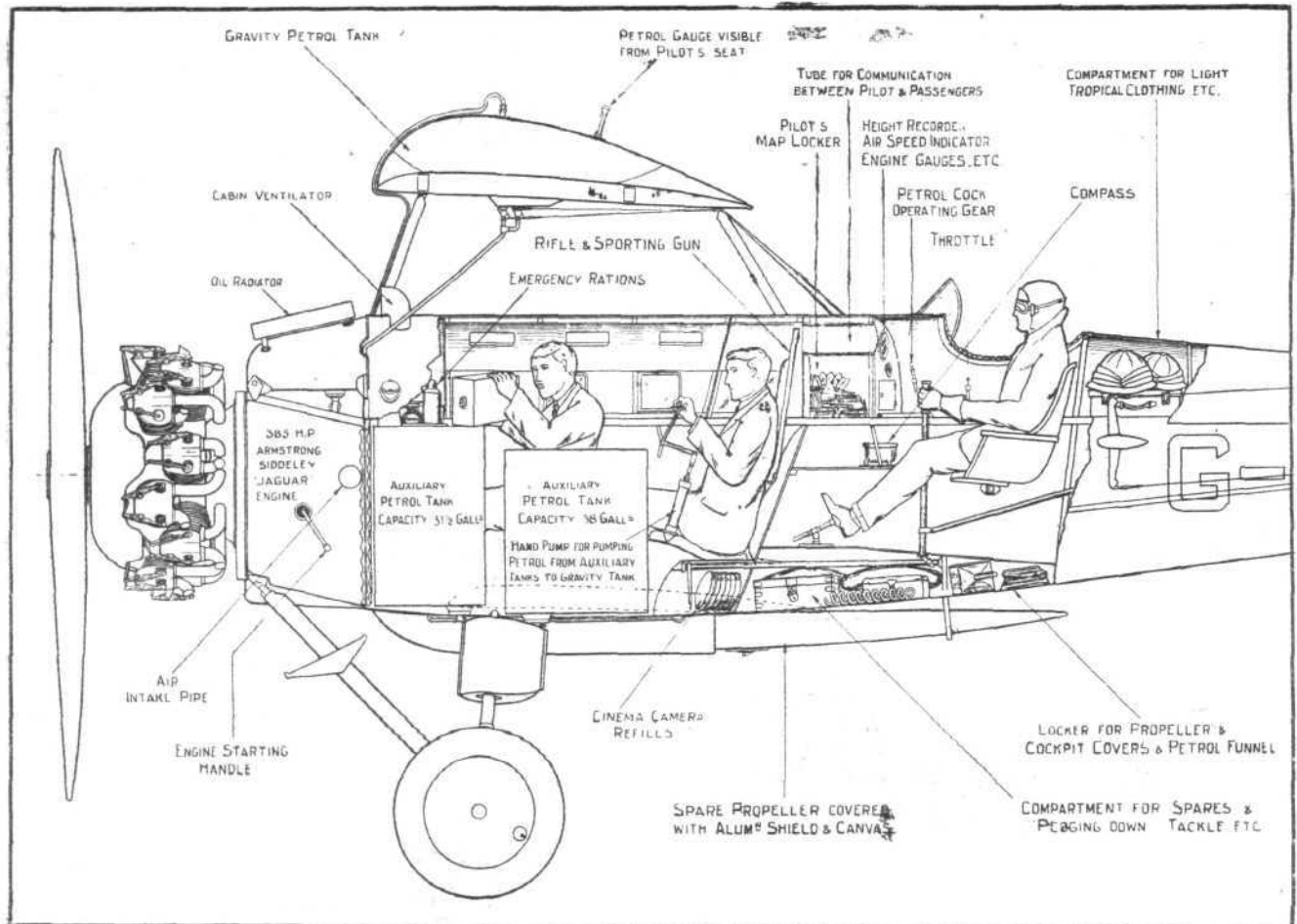


**LONDON—CAPE TOWN FLIGHT: Sketch Map showing the route which Alan Cobham will follow.**





LONDON-CAPE TOWN IMPERIAL AIRWAY SURVEY FLIGHT: Three views of the D.H.50J biplane (385 h.p. Siddeley "Jaguar"), which has been specially equipped for the expedition. Inset, the machine in flight.



Diagrammatic sketch of the D.H.50J, used on the London-Cape Town flight, showing the disposition of the equipment, etc.



LONDON-CAPE TOWN IMPERIAL AIRWAY SURVEY FLIGHT: Pilot and crew of the D.H.50J (Siddeley "Jaguar"); from left to right, Mr. Alan J. Cobham, Mr. B. W. G. Emmott (Cinematographer), and Mr. A. B. Elliott (Engineer).



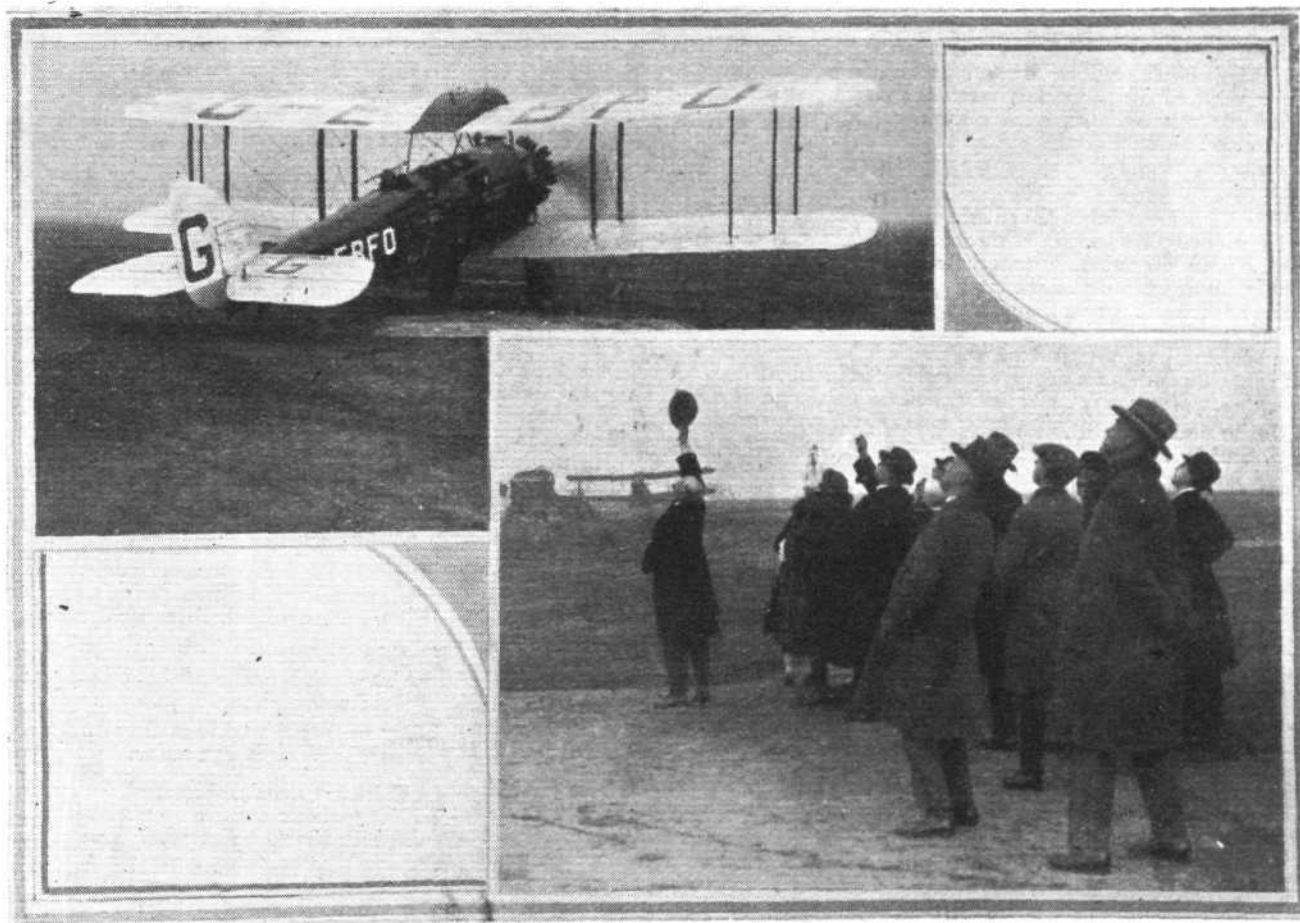
**FAREWELLS AND MASCOTS ; LONDON-CAPE TOWN FLIGHT :** (1) Alan Cobham and Mrs. Cobham, with friends, have a final chat. (2) Elliott, who will valet for the Siddeley "Jaguar," receives his mascot, as does (3) B. W. G. Emmott, the cinematographer.

to the various landing grounds to be used on the route. The difficult organization of distributing fuel and spare equipment has been undertaken and carried out most successfully by Pickford's, Ltd. The organization of the expedition has been specially assisted by C. C. Wakefield, Ltd., who have delivered supplies of Wakefield Castrol oil to every landing ground along the route of the flight.

Invaluable assistance has also been received from the Air Ministry, who have made all the arrangements permitting the expedition to pass through Foreign and Colonial terri-

tories, and, thanks to the data collected by the Directorate of Civil Aviation, have been able to provide Mr. Cobham with all the information on the topographical and meteorological conditions which he will meet.

The expedition has been organized and financed entirely by private enterprise. The construction of the special de Havilland type 50 aeroplane, its Siddeley "Jaguar" engine, and the provision of all the equipment, supplies and finance required have been accomplished by the united efforts of twenty-one companies. The de Havilland Aircraft Co., Ltd.,



**LONDON-CAPE TOWN FLIGHT.—Going — Gone !** The D.H.50.J takes off from Croydon (November 16) en route for Africa.





**Final Touches in the London-Cape Town Flight:** Mr. Elliott (engineer) replenishes the tanks with "B.P." spirit at Croydon, while Mr. Emmott (cinematographer) looks to see if his supply of films is in order.

who have managed the organization of the expedition, have to record the whole-hearted assistance and enterprising co-operation which they have received from the following firms, who have assisted with their products, their services, and finance:—

- Armstrong Siddeley Motors, Ltd.
- Imperial Airways, Ltd.
- The British Petroleum Co., Ltd.
- C. C. Wakefield and Co., Ltd.
- The British Thomson-Houston Co., Ltd.
- The Palmer Tyre Co., Ltd.
- The Robinhood Engineering Works, Ltd. (K.L.G. Sparking Plugs.)
- The Hoffman Manufacturing Co., Ltd.
- Wm. Mallinson and Sons, Ltd.
- Titanine-Emaillite, Ltd.
- J. Stone and Co., Ltd.
- S. S. Smith and Sons (M.A.), Ltd.

#### The R.A.F. Kano-Cairo Flight

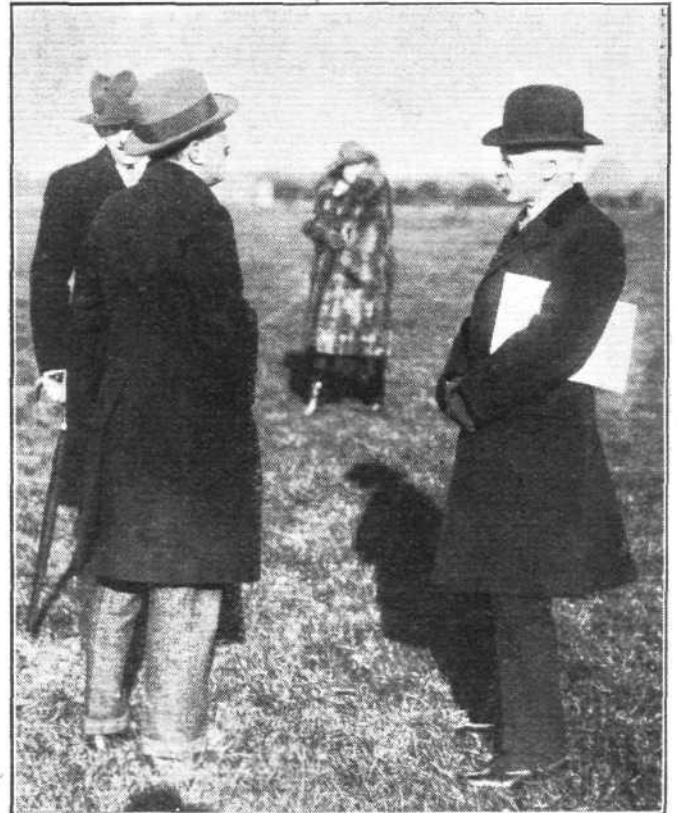
ON November 12 the three D.H.9A (400 h.p. "Liberty") biplanes under Sqdn.-Ldr. Arthur Conningham, which recently flew from Cairo to Kano, Nigeria, started off on the return journey to Cairo at 6.30 a.m. By the evening of November 14 they reached Geneina, having refuelled at Abeshir, continuing their journey on November 15 for El Fasher, in the Soudan, arriving there at 1 p.m. The following morning they proceeded to El Obeid.

On November 17 they cut across country from El Obeid to Khartoum, instead of following the usual route, thereby reducing the distance (normally 300 miles) to 200 miles.

#### The Italian Transatlantic Flight

THE Italian airman Sig. Casagrande, who is attempting a flight from Italy to Buenos Aires in a Savoia S.55 (twin-float twin-engined) mono-seaplane, left Sesto Calende (Lake Maggiore) at 12.30 p.m. on November 3, arriving an hour later at Genoa. The next morning the seaplane, named "Halcyon," left the Victor Emanuel III Dock at 11 a.m. on its official start for the Atlantic flight. In addition to the pilot, the

- Pinchin, Johnson and Co., Ltd.
- Earle, Bourne and Co., Ltd.
- Brunton and Son.
- Accles and Pollock, Ltd.
- Brown Brothers, Ltd.
- Henry Hughes and Son, Ltd.
- The Triplex Safety Glass Co., Ltd. (Compasses).
- Pickford's and Hay's Wharf Shipping and Forwarding Co., Ltd.



**Sir Sefton Brancker discusses Cobham's chances in the London—Cape Town flight with Mr. J. D. Siddeley and Capt. Procter, on the occasion of the "Private view" at Stag Lane last week.**

The following is a list of the principal places along the route, together with the distances from Stag Lane:—

	Miles.		Miles.
Lyons .. ..	475	Kisumu .. ..	5,000
Pisa .. ..	925	Tabora .. ..	5,400
Brindisi .. ..	1,400	Abercorn .. ..	5,685
Athens .. ..	1,765	N. Dola .. ..	6,030
Sollum .. ..	2,215	Broken Hill .. ..	6,140
Cairo .. ..	2,605	Livingstone .. ..	6,430
Assuan .. ..	3,085	Bulawayo .. ..	6,670
Wadi Halfa .. ..	3,275	Palapye Road .. ..	6,870
Khartoum .. ..	3,755	Pretoria .. ..	7,100
Malakal .. ..	4,185	Bloemfontein .. ..	7,400
Mongalla .. ..	4,545	Beaufort West .. ..	7,720
Jinja .. ..	4,890	Cape Town .. ..	8,020

following were on board: Commandante Ranucci, a mechanic and two wireless operators. They arrived safely at Barcelona at 3.40 p.m. that afternoon. On November 11 the flight was continued, and Gibraltar was reached on November 15.

#### Honour for Marquis de Pinedo

ON November 12 the Governor of Rome conferred upon Marquis de Pinedo—in recognition of his magnificent Rome-Tokyo-Rome flight—the Freedom of the City of Rome, which carries with it the title of "Civis Romanus."

#### The Royal Air Force Memorial Fund

THE usual Meeting of the Grants Sub-Committee of the above Fund was held at Idlesleigh House, on November 12. Lieut.-Commander H. E. Perrin was in the Chair, and the other Members of the Committee present were:—Mrs. L. M. K. Pratt-Barlow, O.B.E., Mr. W. S. Field, Squadron Leader E. B. Beauman.

The Committee considered in all 12 cases, and made grants to the amount of £277. The next Meeting was fixed for Thursday, November 26, 1925, at 2.30 p.m.

# THE ROYAL AIR FORCE

London Gazette, November 10, 1925.

## General Duties Branch

Flight Cadet A. W. A. Ricks having successfully passed through the R.A.F. Cadet College, Cranwell, is granted a permanent commission as a Pilot Officer, with effect from and with seniority of Oct. 18.

The following Pilot Officers are promoted to rank of Flying Officer:—F. W. C. G. Tussaud (June 15); V. W. Soltan (Sept. 14); A. E. P. Smith (Sept. 14); J. E. Clayton (Oct. 14); A. L. Macmillan (Oct. 15). Pilot Officer on probation R. J. Stevens is confirmed in rank (Oct. 22); Flight Lt. R. S. Capon is placed on Retired List at his own request (Nov. 8).

The following are transferred to the Reserve:—CLASS A.—Flying Officer H. W. Beck (Nov. 8). CLASS B.—Flight Lt. F. C. Wilkinson (Nov. 11); Flight Lt. J. S. Holloway (Capt. Dorset Regt.) relinquishes his temp. comm. on retirement from the Army (Nov. 6); Pilot Officer H. K. Gillespie is removed from the service (Nov. 11).

## Stores Branch

Flight Lt. A. Latimer is granted a permanent comm. in rank stated (Nov. 11); Squadron-Leader J. H. Wilford is placed on the Retired List and is granted rank of Wing-Commander (Nov. 7).

## Accountant Branch

Flying Officer E. F. Colman is cashiered by sentence of General Court-Martial (Oct. 26).

## Medical Branch

Flight Lt. T. J. Thomas, M.B., is promoted to rank of Squadron Leader (Nov. 9); Flight Lt. (hon. Sqdn. Ldr.) E. A. Aldridge, M.C., B.A., relinquishes his temp. comm. on ceasing to be employed (Oct. 24); Flying Offr. H. J. Henderson (temp. Lt. Dental Surgeon, General List, Army), relinquishes his temp. comm. on ceasing to be employed (Oct. 26).

## Reserve of Air Force Officers

The follg. are granted comm. as Pilot Offr. on probation, General Duties Branch:—CLASS A.—R. N. Bullock, H. W. Knott (Oct. 10). CLASS AA.—L. W. V. Oppen, J. F. O'R Coleman (Oct. 19); D. S. Purnell (Oct. 26).

Pilot Offr. (hon. Flying Offr.) C. H. L. Needham is confirmed in his rank and promoted to rank of Flying Offr., with effect from Oct. 10, and with seny. of April 10. The follg. are confirmed in rank:—FLYING OFFRS.—R. W. Jones (July 9); H. A. Buss, O.B.E., D.S.C., S. A. Packman (Maj., R.A.R.O.) (Nov. 5). PILOT OFFRS.—S. Barker, M. H. Edmunds, F. James, G. P. Mac Donald, A. C. Robertson, W. A. R. Speight (Nov. 5). Pilot Offr. W. F. A. Snell is transferred from Class C to Class A (Nov. 1); Flying Offr. L. D. G. Morrison is transferred from Class B to Class C (Nov. 4); Flying Offr. J. V. Roberts is transferred from Class A to Class C (Nov. 10).

## Memoranda

The permission granted to Sec. Lt. F. S. Riley to retain rank is withdrawn, on enlistment in the Territorial Army. The permission granted to Sec. Lt. E. C. Hale to retain rank is withdrawn, on enlistment in the Army.

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified:—

### General Duties Branch

Wing Commander M. Spicer, to R.A.F. Depot, pending disposal on transfer to Home Estab., 30.10.25.

Flight Lieutenants: P. E. Maitland, A.F.C., to No. 2 Flying Training Sch., Digby, 24.11.25. M. Ballard, to No. 70 Sqdn., Iraq, 22.10.25. C. Crawford, to R.A.F. Depot, on transfer to Home Estab., 17.10.25. C. Crawford, to No. 10 Group H.Q., Lee-on-Solent, 23.11.25.

Flight Lieutenants: A. F. Somerset-Leeke to R.A.F. Depot, on transfer to Home Estab., 30.10.25. R. F. Durrant A.F.C. to R.A.F. Depot on transfer to Home Estab., 17.10.25.

Flying Officers: E. H. Alliot to Armament and Gunnery Sch., Eastchurch 18.11.25; F. W. Barkley, to R.A.F. Depot on transfer to Home Estab., 17.10.25. G. E. F. Boyes to Inland Area Communication Flight, Northolt, 18.11.25; T. Humble, to Aircraft Park, India, 6.10.25; F. L. Pearce, to No. 17 Sq., Hawkinge, 23.11.25; D. E. Godwin to No. 2 Flying Training Sch., Digby, 23.11.25.

Pilot Officer: A. H. W. J. Cocks, to No. 99 Sqdn., Bircham Newton, 16.11.25.

### Stores Branch

Flight Lieutenant T. E. Drowley, to Stores Depot, Iraq, instead of to Station Commandant, Iraq, as previously notified, 22.9.25.

### Accountant Branch

Flying Officers: J. H. S. Richards, to No. 32 Sqdn., Kenley, 16.11.25. B. E. Hume Wright, to H.Q., Cranwell, 20.11.25.

### Medical Branch

Flying Officers: G. M. Anderson, M.B., to R.A.F. Depot, 18.11.25; B. L. Edwards, M.B., to R.A.F. Hospital, Halton, 18.11.25.

## NAVAL APPOINTMENTS

The following appointments were made by the Admiralty on November 10:—

Lieuts. (Flying Officers, R.A.F.): L. C. Sharman, R. C. Allen, and G. H. Birley, to *Columbine* and for No. 405 Flight; T. H. Villiers, to *Furious* and for No. 404 Flight; T. O. Bulteel and R. A. Aldridge, to *Columbine* and for No. 406 Flight. 14.11.25.

## CORRESPONDENCE

*The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.*

### THAT CURTISS PURCHASE

[2101] One need not hold a brief for all the Air Ministry does or ordains, to consider that your leader on this subject does that department something less than justice, and that it appears to have overlooked certain aspects and even bare facts of the case, which cannot but govern not only general policy, but the immediate working programme already decided amid general approval. A policy may be very admirable, consistency even more so, in the all but eternal abstractions of politics. But action and achievement—may I suggest?—are rather more important for the nation's business. "Be British" or "Buy British" is quite admirable as a policy, but as a mere wood-carving it may be ridiculous. Action and business alike seem to demand the fluid solvent "if possible."

Now on the very latest facts—for which I refer you to your own news columns—and the aspects these create, it does not happen to be possible in this case. If so—as I shall try to show—should we not rather praise the Air Ministry for having at long last learned to face facts, and the business habit of securing what it wants when and where it can get it, while it is any use, instead of pondering and perpend the pedantries of policy.

Let me review those facts.

First, some little time ago, one Mr. Fairey, in defiance of all official experts, and at his own expense, succeeds in designing and building a scout biplane which proves to be the fastest Service aircraft—special racing machines excepted—in the world. But because (a) as such, it has to be an exceedingly narrow-bodied one, (b) there is only so much width, and not enough length for even a "six," much less the unreliable "straight eight," he is compelled to fit an extreme Y-type engine, equally to afford the needed power.

The second fact is that the Curtiss engine happens to be the only one of that extreme model within the length and of the required power in existence and current production,

since even the "Liberty" is a little too wide and long, and does not give that power. So he must needs fit a Curtiss, tearfully no doubt.

The third fact is that the wonder-stricken Air Ministry "takes it all back," and has the business gumption—to say nothing of an *amende*—to order 30 Fairey "Foxes." In view of which order Mr. Fairey naturally orders as many more Curtiss engines to complete it, he, too, being faced with the further facts that (a) with his factory resources he can build the machines in a very few months, but that (b) it would take at least a year to build as a tool-room model a British copy of the Curtiss, test and develop it for production, and perhaps another six months to organise that production. All rather a risky procedure, as there might be no certainty of continuance.

The fourth fact—into which we have had our noses well rubbed—is the Schneider Cup.

The fifth—which everybody repeats—is that it was lost perhaps more because our pilots were unpractised at these super-speeds than for any other reason.

The sixth—which the Air Minister is the first to seize and act upon—is his decision to form forthwith an "Experimental Flight," or *corps d'elite* of pilots to do nothing else but fly high-speed machines, as and when produced. And since their first *materiel* possibly to hand will be those 30 Fairey "Foxes"—Martlesham their prescribed headquarters not being precisely a marine centre—it is evident that they will begin training in them.

The seventh fact—which consequently is the whole case for the Air Ministry's further purchasing—is that if that training is to be at all effective, let alone intensive, they will need a change of engines within the first four months at furthest, however carefully Mr. Fairey's originals are fettled.

Let us, however, consider a few more. Without mentioning names, among British engines we have two makes of radial,



of some 3 ft. 9 in. to 4 ft. diameter, and one broad-arrow model of about the same width—each of its type the world's best, and all alike available to Mr. Fairey had they suited his purpose. Clearly, then, they did not.

For reasons why, we can have no better subject—which is perhaps, in all our minds—than Mr. Fred Koolhoven's admirable bull-nosed, high-speed *côte-a-côte*, two-seater monoplane, which actually wears one of these and is credited with some 160 m.p.h.

That is a very good speed for the strategical reconnaissance fighter this machine is in fact; but not for the scout or tactical *avion de chasse* she is not, though supposed to be.

But—as yacht-designers know of old—the tadpole-shaped hull, or “cod’s-head-and-mackerel tail,” though highly efficient for power expenditure up to the top of its natural capacity, has a critical speed-point beyond which no power-application that its structure will bear can drive it. On the contrary, the “plank-on-edge” or narrow section does respond with a definite speed increase to all increases of power—sail or engine—that the structure will stand.

So we have the Koolhoven type of fuselage probably at its speed limit with its accredited speed, whereas Mr. Fairey's aim—and achievement—is something very much faster with a continuously increasing efficiency for every rise in an essentially limited power installation. He—or anyone else with the same object—is therefore bound to a narrow, dart-like fuselage that must not have any cylinder protuberances.

Therefore, as there is likely to be a strong military demand for this type of aircraft, there will probably be others than Mr. Fairey supplying it. So, as we cannot continue to depend on Curtiss engines for its power plant, it should be a worthwhile business proposition to develop the extreme Y type of engine on the original lines of the Boillot-Peugeot *carve*, or the later Anzani vertical "twelve" with staggered cylinders, or, again, the Lancia "Lambda"—in all of which the cylinder axes, if produced, meet just below the plane of the crank-pin throw. This is a type that, in the mass, lends itself to the lightest, yet most robust construction; with few problems—given, for aero purposes, a built-up crankshaft—and, on the contrary, certain special facilities, such as direct tunnel induction between the cylinder-banks from an endwise-mounted carburettor. Valve-gear solutions, even to valvelessness, are easier than usual in some aspects; and, withal, mass water-jacketing is easy to embody. Also, the mechanical advantage of the double, and opposed, *desaxe* speaks for itself, or it would hardly have been adopted by such a practitioner as Lancia. Otherwise the only alternative is the *bi-moteur* of the Breguet type, which, with the weight of its second crankshaft, its essential lay-shaft and its gears, does not seem the better. If its defects did not outweigh any advantage of narrowness, we should have seen it—as we have not—adopted for the fastest French scout machines.

Reverting, by way of conclusion to an overlong letter, to the Air Ministry's waiver of their usual test policy, was not the Schneider Cup itself a sufficient warranty for the performance of the Curtiss? If so, why waste time and public money on superfluous tests from which no immediate new thing can be learnt when we need supplies now, not six or nine months hence?

GEOFFREY DE HOLDEN-STONE.

The Royal Colonial Institute.  
November 16.

### The L.A.C. Flying Instructors

In the inscription to a photograph published in our issue of November 12, showing a group standing behind one of the Lancashire Aero Club's de Havilland "Moths," we described Mr. Scholes as the club's chief instructor. This might give a wrong impression, and we have been asked to point out that Messrs. Cantrill and Scholes, the two instructors who are giving their services to the good cause without remuneration, are on an equal footing, and that consequently the wording of our inscription might be misleading.

### Change of Address

WE have been asked to point out that the offices of the Institution of Aeronautical Engineers have been transferred from the old address at 60, Chancery Lane, to 34, Broadway, Westminster, London, S.W.1. The new telephone number is Victoria 5333.

## Air Mails to Germany

The Postmaster-General announces that, from November 14 until further notice, Route 4A (London-Amsterdam-Hanover-Berlin), shown on p. 2 of the current Air Mail Leaflet, will be worked as far as Amsterdam only. The dispatch of letters for Germany and beyond by this route will be suspended after that date.

### IMPORTS AND EXPORTS, 1924-1925

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910). For 1910 and 1911 figures see "FLIGHT" for January 25, 1912; for 1912 and 1913, see "FLIGHT" for January 17, 1914; for 1914, see "FLIGHT" for January 15, 1915; for 1915, see "FLIGHT" for January 13, 1916; for 1916, see "FLIGHT" for January 11, 1917; for 1917, see "FLIGHT" for January 24, 1918; for 1918, see "FLIGHT" for January 16, 1919; for 1919, see "FLIGHT" for January 22, 1920; for 1920, see "FLIGHT" for January 13, 1921; for 1921, see "FLIGHT" for January 19, 1922; for 1922 see "FLIGHT" for January 18, 1923; for 1923, see "FLIGHT" for January 17, 1924; and for 1924, see "FLIGHT" for January 22, 1925.

	Imports.		Exports.		Re-Exports.	
	1924.	1925.	1924.	1925.	1924.	1925.
Jan. . .	2,213	3,546	52,239	83,728	2,219	291
Feb. . .	920	985	26,349	85,639	335	20
Mar. . .	11,381	—	34,113	56,881	509	9,355
Apr. . .	373	321	56,998	78,041	6,014	6,732
May . . .	3,426	560	125,138	74,844	4,162	15,278
June . .	1,219	190	87,629	71,009	2,115	667
July . .	1,510	184	179,292	159,262	2,708	870
Aug. . .	687	469	247,982	113,054	950	—
Sept. . .	4,383	1,224	67,749	111,237	641	213
Oct. . .	2,715	460	143,512	114,563	3,743	855
	<u>28,827</u>	<u>7,939</u>	<u>1,021,001</u>	<u>948,258</u>	<u>23,396</u>	<u>34,281</u>

## PUBLICATIONS RECEIVED

*Technical Notes:* No. 220.—The Drift of an Aircraft Guided Towards its Destination by Directional Receiving of Radio Signals from the Ground. By E. P. Warner, June, 1925. No. 221.—Model Tests on the Economy and Effectiveness of Helicopter Propellers. By Max M. Munk, July, 1925. No. 222.—Air Flow Investigation for Location of Angle of Attack Head on a JN4h Airplane. By R. G. Freeman, August, 1925. No. 225.—Propeller Scale Effect and Body Interference. By F. E. Weick, September, 1925. No. 226.—Wind Tunnel Tests of Fuselages and Windshields. By E. P. Warner, September, 1925. No. 227.—Determination and Classification of the Aerodynamic Properties of Wing Sections. By Max M. Munk, September, 1925. The U.S. National Advisory Committee for Aeronautics, Washington, D.C., U.S.A.

## AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor.  
The numbers in brackets are those under which the Specifications will  
be printed and abridged, etc.

APPLIED FOR IN 1924

*Published November 19, 1925*

- 15,542. NAAMLooZE VENNootSCHAP INStItUt VOOR AeRo-EN HyDRoDyNA-  
mieK. Bodies acting by fluid reaction for driving, supporting,  
etc. (219,664.)
- 15,543. NAAMLooZE VENNootSCHAP INStItUt VOOR AeRo-EN HyDRoDyNA-  
mieK. Bodies acting by fluid reaction for driving, supporting,  
etc. (221,186.)
- 28,359 G. WATSON. Rotor windmills. (241,739.)

APPLIED FOR IN 1925

*Published November 19, 1925*

421. L. BONGIOVANNI. Forced-feed devices for aeroplane engines. (228,137.)  
14.183. R. MACREZ. Radiators for aeroplanes. (234,838.)

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